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WASTE WATER FROM RICE NOODLE FACTORY

SANYA WONGWAIAMONDWACH : THE EFFICIENCY OF RICE NOODLE
WASTE WATER TREATMENT BY COAGULATION-FLOCCULATION PROCESS.

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The objective of this research was to study the effectiveness of treatment for wastewater from rice noodle factory by coagulation-flocculation process. The comparison of COD, SS and effectiveness of turbidity removal were also studied. The coagulants used were alum in dosage 80 mg/l and ferric chloride in dosage 40 mg/l with 2,000 mg/l of lime as coagulant aid. Rice noodle wastewater treatment coagulation models comprised of 1 hour sedimentation, 1 minute rapid mixed, 20 minutes slow mixed and 2 hours final sedimentation.

The results showed that the effectiveness of alum and ferric chloride in removal of COD was 52.78% and 55.15% respectively; removal of SS was 95.14% and 96.20% respectively; and removal of turbidity was 95.14% and 96.20% respectively. Moreover, it was found that the effectiveness of COD removal of both coagulants was more than 50% at statistically significant difference ($p\text{-value} = 0.006, <0.001$). The effectiveness of alum to remove SS and turbidity was less than 95% ($p\text{-value} = 0.581, 0.514$) while it was more than 95% at statistically significant difference for ferric chloride ($p\text{-value} = <0.001, <0.001$). There was no statistically significant difference of COD removal efficacy between alum and ferric chloride ($p\text{-value} = 0.115$). But the effectiveness to remove SS and turbidity of alum and ferric chloride was statistically different ($p\text{-value} < 0.001, <0.001$). The effectiveness of ferric chloride was higher than that of alum.